CLAIMS

1. (previously presented) A method for establishing a connection with a mobile node, the method comprising:

receiving a registration request;

determining a tunnel identifier;

transmitting the registration request to the home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

receiving a response to the request and, responsively, activating a connection;

receiving data packets from the home agent in response to transmitting the registration request, the data packets including the tunnel identifier in a key field of a tunnel header of the data packets;

identifying the connection using the tunnel identifier, wherein identifying the connection using the tunnel identifier comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection; and

routing the packets along the connection.

2-4. (canceled)

5. (previously presented) A method for establishing a connection with a mobile node, the method comprising:

receiving a registration request from a mobile node, the mobile node having a home agent, the registration request also representing a call;

assigning a tunnel identifier to the call associated with the registration request;

forwarding the registration request to the home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

establishing a connection;

receiving a registration response and forwarding the registration response to the mobile node;

receiving packets of data from the home agent, each of the packets of data including the tunnel identifier in a key field of a tunnel header of the packet; and

subsequently, using the tunnel identifier to identify the connection for packets having the tunnel identifier, wherein using the tunnel identifier to identify the connection for packets having the tunnel identifier comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection.

6. (canceled)

7. (previously presented) The method of claim 5 wherein the connection information is from the point-to-point protocol (PPP).

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8.   (previously presented)   The method of claim 5 wherein each of the packets includes a header and the header is a Generic Routing Encapsulation (GRE) header.

9.   (previously presented)   A method comprising:

receiving a registration request;

receiving a data stream, the data stream associated with the registration request, the data stream including a plurality of packets;

assigning a tunnel identifier to the data stream;

transmitting the registration request to the home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

receiving return packets of information, the return packets of information including the tunnel identifier in a key field of a tunnel header of the return packets; and

translating the tunnel identifier into a connection and transmitting the return packets using the connection, wherein translating the tunnel identifier into the connection comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection.

10.   (previously presented)   The method of claim 9 wherein the step of translating includes establishing the tunnel table, the tunnel table having entries corresponding to tunnel identifiers.

11.   (previously presented)   The method of claim 10 wherein the step of translating includes establishing the connection table, the connection table including connection information for entries in the tunnel table.

12.   (previously presented)   The method of claim 11 wherein the connection table includes information according to the point-to-point protocol (PPP) format.

13.   (previously presented)   A system comprising:

a mobile node;

a packet data-switching node (PDSN), the PDSN communicatively coupled to the mobile node, the PDSN receiving a registration request from the mobile node, the PDSN assigning a tunnel identifier to a plurality of packets received from the mobile node, the PDSN further inserting the tunnel identifier in a key field of a tunnel header of the plurality of packets;

a home agent coupled to the PDSN, the home agent receiving and storing the tunnel identifier in the registration request and sending return packets to the PDSN including the tunnel identifier in a key field of a tunnel header of the return packets;

wherein the PDSN receives a response message from the home agent and establishes a connection between the mobile node and the home agent; and

wherein the PDSN extracts the tunnel identifier from the return packets and translates the

tunnel identifier into information representative of the connection, and transmits the return

packets on the connection, wherein the PDSN translating the tunnel identifier into information

representative of the connection comprises the PDSN using the tunnel identifier to identify an

entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection

table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the

connection table identifies the connection.

14.   (canceled)

15.   (original)   The system of claim 13 wherein the connection is made according

to the point-to-point protocol (PPP).

16.   (previously presented)   The system of claim 13 wherein the PDSN includes

the tunnel table and the connection table, and wherein the connection table is a point-to-point

protocol (PPP) connection table.

17.   (previously presented)   A system for establishing a connection with a

mobile node, the system comprising:

means for receiving a registration request;

means for determining a tunnel identifier;

means for transmitting the registration request to the home agent, the registration request

including the tunnel identifier in a key field of a tunnel header of the registration request;

means for receiving a response to the request and, responsively, activating a connection;

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means for receiving data packets from the home agent in response to transmitting the registration request, the data packets including the tunnel identifier in a key field of a tunnel header of the data packets;

means for identifying the connection using the tunnel identifier, wherein identifying the connection using the tunnel identifier comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection; and

means for routing the packets along the connection.

18-20. (canceled)

21. (previously presented) A system for establishing a connection with a mobile node, the system comprising:

means for receiving a registration request from a mobile node, the mobile node having a home agent, the registration request also representing a call;

means for assigning a tunnel identifier to the call associated with the registration request;

means for forwarding the registration request to the home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

means for establishing a connection;

means for receiving a registration response and forwarding the registration response to the mobile node;

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means for receiving packets of data from the home agent, each of the packets of data including the tunnel identifier in a key field of a tunnel header of the packet; and

means for using the tunnel identifier to identify the connection for packets having the tunnel identifier, wherein using the tunnel identifier to identify the connection for packets having the tunnel identifier comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection.

22.   (previously presented)   A system comprising:

means for receiving a registration request;

means for receiving a data stream, the data stream associated with the registration request, the data stream including a plurality of packets;

means for assigning a tunnel identifier to the data stream;

means for transmitting the registration request to a home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

means for receiving return packets of information, the return packets of information including the tunnel identifier in a key field of a tunnel header of the return packets; and

means for translating the tunnel identifier into a connection and transmitting the return packets using the connection, wherein translating the tunnel identifier into the connection comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection.

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23.   (previously presented)   A computer readable medium having stored therein instructions for causing a processing unit to execute the following method:

receiving a registration request;

determining a tunnel identifier;

transmitting the registration request to the home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

receiving a response to the request and, responsively, activating a connection;

receiving data packets from the home agent in response to transmitting the registration request, the data packets including the tunnel identifier in a key field of a tunnel header of the data packets;

identifying the connection using the tunnel identifier, wherein identifying the connection using the tunnel identifier comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection; and

routing the packets along the connection.

24.   (previously presented)   A computer program for establishing a connection between a mobile node and a home agent, the program comprising:

first code for receiving a registration request;

second code for determining a tunnel identifier;

third code for transmitting the registration request to the home agent, the registration request including the tunnel identifier in a key field of a tunnel header of the registration request;

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fourth code for receiving a response to the request and, responsively, activating a connection;

fifth code for receiving data packets from the home agent in response to transmitting the registration request, the data packets including the tunnel identifier in a key field of a tunnel header of the data packets;

sixth code for identifying the connection using the tunnel identifier, wherein identifying the connection using the tunnel identifier comprises using the tunnel identifier to identify an entry in a tunnel table and using the entry in the tunnel table to identify an entry in a connection table, wherein the tunnel table is indexed by tunnel identifiers, and wherein the entry in the connection table identifies the connection; and

seventh code for routing the packets along the connection.

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